"The Benefits of a Mechanics' Institute and the Blessing of Temperance": Science and Temperance in 1840s Ireland

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Abstract. In the 1840s the temperance movement swept through Ireland inspiring hundreds of thousands of Irish Catholics to take the total abstinence pledge. Simultaneously, this decade witnessed the proliferation of societies and institutions for the acquisition and dissemination of scientific and technological knowledge. Scientific and temperance movements developed a close relationship that took on a particular significance in this impoverished and deeply divided country. Not only were sobriety and scientific knowledge deemed to be the prerequisite for individual self-improvement and prosperity. In conjunction with the movement for Repeal of the Union and with the more radical, nationalist Young Ireland movement, the combined economical and moral improvement that scientific and temperance movements strove to achieve was promoted as the potential foundation for building a peaceful, prosperous, non-sectarian and inclusive Irish nation.

In the winter of 1840 the members of the Galway Trades Temperance Society announced their intention of "forming a society and establishing an institute" which, they hoped, "would be the great means of diffusing useful knowledge and of increasing their happiness and comfort."[1] Having, as the tradesmen explained, "sought shelter under the hallowed banner of Temperance," anxious to avoid the dangers of temptation and with the intention of preserving their industrious and sober reputation, they had decided to found a mechanics' institute. With a membership composed of artisans and apprentices, skilled workers and tradesmen and led by the Prior of the Dominican Convent, the Very Reverend Father Thomas Agnew, the Galway Trades Mechanics' Institute, Total Abstinence and Mortality Association combined temperance sociability with scientific lectures, working class interest in a benefits society and small savings bank with more middle class interest in self-improvement through practical and moral instruction.[2] Seven months later a similar institution was proposed in the town of Carrick-on-Suir, in County Tipperary.[3]

Galway and Carrick-on-Suir were not the only Irish towns where science and temperance formed an alliance. Throughout the Irish provinces temper-

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ance societies provided rooms for scientific lectures, instruction and demonstrations, collaborated with existing science associations or founded their own. Members of Waterford's temperance society were encouraged to frequent the town's mechanics' institute, which in turn entertained them with temperance lectures; Wexford's Temperance Hall served the mechanics' institute as a meeting place, while in Clonmel and other towns Temperance Halls opened their doors for lectures on phrenology, animal magnetism, hydropathy, explosives and other scientific subjects.[4] Nor was this taste for a mixture of science and temperance restricted to the tradesman and artisan population. In Dublin, Cork and Galway temperance societies aiming at a more middle-class membership founded literary and scientific societies and evening schools for their clientele of shopkeepers, clerks and young professionals, merchants and small business owners.[5] Periodicals such as the short-lived *Irish Temperance Chronicle and Industrial and Family Magazine* (September-October 1846), the *Dublin Journal of Temperance, Science and Literature* (1842-43) and the *Dublin Weekly Herald. A Temperance, Agricultural, Commercial and Mechanics' Journal* (1838-42), catered to this combination of practical and moral interests, covering the meetings of scientific societies and mechanics' institutes along with temperance issues.

Although the 1840s movement for Repeal of the Union with Britain is better known, the two popular movements that are combined in these institutions and periodicals played an integral role in shaping Irish culture in the period between Catholic Emancipation and the Famine. From the late 1830s through the 1840s, the temperance movement swept through Ireland, waving the banner of total abstinence over rural and urban populations, workers, peasantry and the middle classes. Although the idea of temperance came to the land of *poteen* and *sheebeens* by way of American and British Protestant culture, under the leadership of the Capuchin friar, Father Theobald Mathew of Cork, the temperance movement drew in hundreds of thousands of Irish Catholics to take the total abstinence pledge, participate in mass processions and form temperance societies throughout the country. Simultaneously, the 1830s and 40s witnessed the proliferation throughout Ireland of voluntary associations for the acquisition and dissemination of scientific and technological knowledge and of institutions for the scientific education of artisans and tradesmen. Science societies, literary and philosophical societies, and mechanics' institutes were founded in towns large and small, some barely surviving their foundational meetings, others continuing their activities well into the twentieth century.

Temperance societies, mechanics' institutes and voluntary science societies were firmly anchored in British popular culture, but the close relationship that developed between the temperance and scientific movements was in many ways unique to Ireland. Despite the similar organizational forms these associations took in both countries and the similar kinds of supporting and promotional rhetoric that they used, in the radically different social, political

and economic contexts of Britain and Ireland these commonalities did not necessarily translate into shared cultural meanings. A study of the interaction of these movements can therefore reveal not only what specific hopes and expectations Irish contemporaries associated with these organizations, but especially what particular significance they had within the cultural context of 1840s Ireland.

With both scientific and temperance movements reaching the height of their popularity in Ireland during the 1840s, a period during which Daniel O'Connell's movement for Repeal of the Union peaked as well, it would perhaps seem surprising that historians have not yet looked for possible connections between them. Interactions and tensions between the Temperance and Repeal movements have been the subject of several detailed studies since the mid-1980s.[6] Despite continuing interest in nineteenth-century Irish popular culture and movements, research into the history of popular science in Ireland has, until recently, been largely lacking.[7] Although numerous reasons for this lack of interest can be postulated, it is no doubt due at least to some extent to the pervasive assumption, based on the history of professional Irish scientific institutions and researching scientists, that science was an "external force" in Ireland, the cultural property and domain of the Protestant Ascendancy, the power elite of Ireland.[8] While it is certainly well-documented that professional science in Ireland was dominated by a generally conservative, loyal, Anglo-Irish Protestant elite and their interests, local and amateur science associations, in contrast, showed much more diversity, including amongst their members Catholics, Quakers and Unitarians, liberals, political radicals and representatives of the emerging Irish middle and lower middle classes – groups that were also strongly represented in the Irish temperance movement.

Thus, although science and temperance would seem at first glance unconnected, there is much evidence that in the eyes of many contemporaries the movements for sobriety and for scientific knowledge were seen as being closely linked. Indeed, although the movements offered differing explanations for Ireland's continuing malaise and proposed different solutions to escape the country's devastating cycle of sectarian violence and impoverishment, they shared a common vision of peace, prosperity and national rejuvenation. In the 1840s, their conjunction with O'Connell's movement for Repeal of the Union and with the more radical nationalist Young Ireland movement was to form a powerful ideological combination.[9]

Neither the scientific nor the temperance movement originated in Ireland. Both filtered into Ireland through Britain and North America, where they can be interpreted not only as reactions to industrialization and urbanization, but also in their social role as voluntary associations for the rising middle-classes.[10] In Britain the nineteenth century saw the proliferation of various forms of voluntary scientific associations for different sectors of the primarily middle to lower middle class public. Mechanics' institutes emerged in the early 1820s, following scattered attempts by workers and social reformers

to provide educational opportunities for adult artisans and apprentices.[11] Designed with the education of skilled workers, artisans and tradesmen in mind, these institutions offered courses in technical and scientific subjects, provided reading rooms and a library, public lectures and often also more popular entertainments. The first mechanics' institute was founded in London in 1823 by George Birkbeck.[12] By 1851 John Hudson, historian of adult education, counted at least 610 such institutions in England, with a subscribing membership of over 100,000, and his data was almost certainly incomplete.[13] The movement immediately received an enthusiastic response in Ireland. An institute was opened in Dublin in 1824, followed in rapid succession by foundations in Belfast, Cork, Limerick, Waterford, Armagh and Ennis in 1825, Galway in 1826, Nenagh and Portaferry in 1828 and Londonderry in 1829. Between 1824 and 1860, over thirty Irish towns founded an institution that bore the name of mechanics' institute, and many others supported similar voluntary associations and organizations for the education of adult and apprentice tradesmen and artisans.[14]

Mechanics' institutions reflected a growing perception among British middle class social reformers that machines, technology and science were becoming increasingly important for manufacturing processes and practices. Accordingly, workers, tradesmen and artisans needed to acquire more technical skills and scientific knowledge, in order to apply it profitably to their trades and to improve their intellectual standing and financial position. To what degree this perception of the influx of machinery and science into the traditional workplace is strictly accurate for the first half of the nineteenth century is debatable. The idea that artisans could be in need of formal, *schooled* instruction in the abstract methods or natural laws behind their trades, in contrast to traditional trades learning through observation and oral instruction, is, however, doubtless a reflection of the rising status of science and technology.[15] Well-established for the British case are also the connections between support for mechanics' institutes, social reform and Protestant non-conformism. As far as such generalizations are allowable, in Britain, Tories and Anglicans tended to view such institutions for the scientific and technological education of the working classes with suspicion, whereas middle-class Whigs, political liberals and radicals, Presbyterians and other dissenting Protestant denominations lent their support.[16]

The membership of scientific societies tended to be similarly recruited from social reformers and religious non-conformists. Several seminal studies investigate the phenomenon of nineteenth-century science societies and their role in contributing to the formulation of British middle-class identity.[17] Crucially, many members belonged to the industrial middle classes, including manufacturers, brewers and large mill owners, or practiced occupations that were on their way to becoming professions, like law, medicine and engineering. Without inherited status and often with limited possibilities for political participation, individuals in these groups could find alternative sources of cred-

ibility and reputation in scientific societies, as well as using these societies as a means of expanding social networks and consolidating social contacts.[18] Like mechanics' institutes, nineteenth-century science societies reflected the social and economic changes wrought by the industrial revolution. In contrast to the scientific societies of the Enlightenment, which occupied themselves with the "disinterested" study of nature, i.e. inquiry without concern for potential applications or profit, members of these nineteenth-century societies frequently owed their social and financial status to the application of modern technologies and saw no reason to exclude more prosaic topics such as gas street lighting or the steam engine from their meetings.

While factors such as Protestant non-conformism, and in particular Presbyterianism, social reform interests, and industrialization strongly influenced British interest in science societies and mechanics' institutes, their effect in Ireland, as Seamus Duffy notes, was strongly limited.[19] Ireland was a largely rural and Catholic country. There was little mechanized industry outside of Belfast and Dublin, while the country's Presbyterian population was concentrated in the northern province of Ulster. At the provincial level, political and financial power tended to be wielded by traditional conservative elites, although the Municipal Reform Act of 1840 reduced their influence in many municipalities.[20] Political and sectarian conflict, manifest and latent, remained a persistent undercurrent of national and local affairs. As Thomas Kelly has noted in regard to the mechanics' institute movement in Ireland, it is on the whole surprising, "that in a country riven by political and sectarian animosities, with few large towns and little developed industry, and with a largely illiterate and poverty-stricken population, a movement directed toward the scientific education of the working people should gain a foothold at all."[21] That it did, and that science societies as well found such a ready reception, would seem to indicate that Irish supporters of these institutions had different expectations than their British counterparts. If British mechanics' institutes implicitly intended to educate the workforce for docile participation in the emerging industrial society, in Ireland it was, for some supporters at least, as Seamus Duffy wryly comments, "a historical case of putting the cart before the horse," the hope that technical education would inspire the Irish artisans to enact their own industrial revolution.[22]

The aims and intentions of the temperance movement as well were transformed in the course of its transition into the Irish context. Like mechanics' institutes and nineteenth-century scientific societies, the temperance movement had its roots in middle-class Protestant culture and among social reformers. It formed to a large degree as a reaction to the social changes of the early nineteenth century.[23] Urbanization and urban poverty seemed to threaten social stability, while changing social relations led members of the middle classes to search for means to differentiate themselves not only from the lower classes with their rowdy traditional pastimes, but also from the upper classes and their perceived dissipation.[24] Temperance became part of the movement towards

self-improvement, self-control and "rational recreation."[25] With much of traditional custom based around alcohol as a medium of social exchange and sociability, the temperance movement can be interpreted as an expression of anxieties about deeper lying changes in social relations.

Like temperance societies, science societies had a firm place within that peculiar Victorian concept of "rational recreation," of character-building leisure activities. The diversion that they offered was a welcome addition to the social programs of temperance societies, which were constantly faced with a need to provide their membership with entertaining alternatives to the pub. A steady stream of bands, dances and tea parties provided the members with respectable occupations for their time and with alternative forms of sociability,[26] and science fit well into this search for edifying entertainment for a number of reasons. It was deemed to be a religiously and politically neutral subject, not inclined to lead to raised tempers or controversy; it required disciplined thought and refined the intellect and, whatever one's religious beliefs were, science could be viewed as morally uplifting as well, since it contemplated the works of the Creator.

Temperance societies and science associations thus shared a commitment to middle-class values. The middle classes not only formed the core membership of these institutions, but also sought to extend their "benefits" to the working classes – science especially in the form of mechanics' institutes and temperance through various forms of coercion in charitable organizations, as well as through voluntary associations. For these reasons, science education and temperance societies have frequently been interpreted as attempts by the middle classes to exert control over their social inferiors.[27] As the historian of adult education J. F. C. Harrison notes, in Britain temperance and adult artisan educational initiatives were viewed as two different approaches to the same problem: controlling the unruly and potentially politically disruptive behavior of the working classes.[28] British contemporaries certainly saw connections between science and temperance and appreciated the function of scientific entertainments in providing alternatives to the pub as a working class leisure activity,[29] but although personal overlaps between scientific and temperance societies did exist in Britain, these connections were generally informal and not programmatic.[30]

When looking at science and temperance in Ireland, and especially at the combination of the two, much would seem to speak for an extension of the social control hypothesis. As the British middle classes looked to science education and temperance as a means to "civilize" the unruly lower classes, the British government had similar expectations for their effect on the "wild" and dangerously subversive population of Ireland. Both intemperance and ignorance were seen as contributing to continuing Irish violence and sectarianism. Not only was the Rebellion of 1798 frequently portrayed as the work of a drunken mob,[31] the British government and magistrates also suspected, not entirely without reason, that pubs and drinking houses could function as

recruiting grounds for violent secret societies and radical political groups.[32] Likewise, it was assumed that the Irish population was uneducated, dominated by Catholic superstition, and thus easily manipulated by priests and incited by provocateurs to riots and uprisings. A "proper" education (i.e. an education without Catholic influence) would, it was thought, facilitate assimilation into the political economy of an industrial society and the political priorities of the British Empire by appealing to the higher faculties of reason and would let the Irish see the advantages of the Union with Britain.

Social control intentions would indeed seem to be at the base of the early temperance movement in Ireland. As Elizabeth Malcolm has shown, in the 1820s and 30s it was strongly influenced by the success of the American temperance movement, which demanded total abstinence in regard to spirits but promoted moderation in the consumption of beer and wine. This movement stemmed from American Protestant Evangelical culture and had its strongest support in the north of Ireland. According to Malcolm, the simultaneity of this early, Protestant temperance movement and the organized push for Catholic Emancipation in the mid-to-late 1820s was not coincidental.[33] Instead, the early temperance movement was an expression of Protestant anxiety in a rapidly changing political and economic situation.[34]

The movement was viewed with great suspicion by the Catholic clergy and middle classes, who, seeing the numerous proselytizing Evangelicals among the movement's supporters, feared that its true aim was conversion.[35] The Catholic clergy and laity may have agreed in theory with the temperance cause and hardly came out in support of drunkenness, but they remained distant from the temperance movement. By the late 1830s this had begun to change, as the Catholic clergy began to extend their support to the movement. In the meantime, it had acquired a more working-class and performative character and had shifted from moderation, which prohibited the whiskey of the poor while allowing the wine of the wealthy, to total abstinence, which affected all classes equally.[36] In the south of the island, the movement received backing from a handful of Catholic clergymen, but support tended to be strongest among individuals in the Unitarian and Quaker communities, some of whom followed radical social reform agendas and also often expressed Irish nationalist sympathies, among liberal Protestants, and with members of the business community, which in Dublin, and especially in the province of Munster, had a large and wealthy Quaker representation.[37]

By 1840, under the leadership of Father Mathew, temperance had unexpectedly become a mass Catholic movement. Although Mathew had been reluctant to become involved in a movement so strongly associated with Protestantism and proselytization, it quickly became what Paul Townend has called "the single most extraordinary social movement that occurred in pre-famine Ireland."[38] The temperance movement encompassed nearly every sector of Irish Catholic society, from the upper middle classes to impoverished rural laborers and peasants. Mathew's message of self-improvement and economic

prosperity through teetotalism differed little from the message of British and Irish Protestant social reformers, in that it promoted the standard middle-class Victorian values of sobriety, frugality and industry. Although some temperance disciples may have reacted more to the movement's ecstatic and charismatic elements than to Mathew's moral and financial arguments,[39] his message found a ready audience among the middle and lower middle classes, those with most hope of improving or solidifying their social position. Despite similarities with the message of social reformers, coming from the mouth of a Catholic clergyman, it made social respectability and status mobility seem a real and achievable possibility.[40]

Temperance societies and mechanics' institutes tended thus to appeal to the same social groups of the middle to lower middle classes and the "respectable" working classes who could hope through sobriety and education – the acquisition of "useful knowledge" – not only to increase their prosperity, but also their social prestige. Indeed, science and temperance were seen as twin pillars in the project of self-improvement and as being in a relationship of mutual support and stabilization. Not only the liberal Catholic tradesmen of Galway made this assumption when they looked to their teetotal mechanics' institute to help them "avoid the danger of encountering such temptations" as intemperance and to give them "a new and more improved position in life."[41] The editor of the conservative *Dublin Weekly Herald*, as well, asked, "How shall the good effect rendered by Total Abstinence be rendered permanent?" and, commenting upon "the great value of education, as an important aid in establishing the Temperance reformation," found the answer in "timely self-culture; in other words, by education, properly so called."[42]

Science and temperance were seen as being in a reciprocal relationship. As a reporter to the moderate, nationalist *Waterford News* declared, "Education and Temperance are essentially related and should, therefore, always go hand in hand, if these be duly regarded, other blessings will follow in their train, and materially conduce to our social prosperity."[43] Not only was education seen as a means for stabilizing the temperance pledge. Temperance was also deemed to be a prerequisite for education, since sobriety enabled artisans and mechanics to recognize the value of knowledge for their personal happiness and occupational and financial advancement. The Irish mechanics' institute movement of the 1820s certainly had these aims in mind,[44] but, despite early enthusiasm, most institutions had collapsed soon after their foundation, mired in apathy and sectarian grievances. According to the Irish economist Thomas Cliffe-Leslie, the early failure and later revival of these institutions from the late 1830s onwards demonstrated that "a great moral, social, and economic improvement must precede the possibility of their success," not follow it, as the founders had expected.[45] The moral revolution of temperance needed to come before the intellectual revolution of education, in order for the latter to be effective. As a northern correspondent commented, useful knowledge followed in the path of temperance, "like cause and effect – teetotalism plucking

away the weeds from the popular mind, and education following after, to sow a crop of wholesome knowledge in the soil reclaimed from vice and misery… [W]hat Mechanics' Institutes, and their lectures failed to do for the people, it [temperance] will assuredly accomplish."[46]

Not all contemporaries were equally convinced by this middle-class rhetoric of moral and financial improvement through science education or by the middle-class promoters of institutions for the scientific and technological instruction of artisans. A contemporary, most likely Maurice Lenihan, a friend and supporter of both Father Mathew and Daniel O'Connell,[47] gave a scathing summary of a lecture at the Limerick Literary and Philosophical Society in 1841:

> A rapid sketch followed all the *ologies* in their due connection and sequence, concluding with a bold appeal to the privileged classes of this city, that they should at the 11th hour come forward, and organise an institution on a popular basis for the purpose of instructing and encouraging the mechanics and tradesmen of their native town… [T]he gentlemen of Limerick ought to assist in the patriotic work of clearing away the dull rubbish of ignorance, the defiling dust of sloth, from the lustre of the emerald, and bathing the drooping shamrock with the heavenly dews of science – Fine blarney! – If the people were well fed, they would *take the polish* better.[48]

Criticism of such middle-class "talk instead of action" was rarely expressed with this degree of candor.

While temperance societies developed a lively itinerary of banner processions and marching bands, dances and the ubiquitous tea parties to entertain their members, their reading-rooms and scientific and general educational facilities had fundamentally different intentions. Their purpose was not only to provide edifying sociable alternatives to the pub, but also to stabilize and enhance the effects of the temperate life-style, which for its part was credited with awakening intellectual capacities and creating an appetite for improvement and knowledge. In a speech at a temperance festival in the northern town of Newry in 1841, which was not only reprinted in several newspapers, but also widely distributed by Father Mathew himself,[49] Charles Gavan Duffy, editor of the *Belfast Vindicator* and later of the Young Ireland newspaper, *The Nation*, called for all temperance societies "to be made a species of mechanics' institute." Removing alcohol was only half the job:

> When total abstinence ends in merely redeeming a man from the vice of intoxication, it stops far short of the point which its propagator intended it to attain… You have quenched one thirst; ought you not to excite another thirst – a thirst which is not to be slackened in the whiskey shop but in the lecture room – a thirst for knowledge?… Why should not every teetotal society have its lecture-room, where the artisan might be taught the principles of mechanics, the farmer the latest improvements in agriculture, and every one something that would make him a better man, and a better citizen?[50]

Such rhetoric appealed to individuals' concerns about moral and financial improvement, about respectability, reputation and employment prospects,[51]

but the rhetoric of self-improvement was not the only link between temperance societies, mechanics' institutes and scientific societies. Both science and temperance shared the assignation of being politically and religiously neutral. Their institutions were thus conceived as ideal spaces for the practice of civilized conduct and sociable contact amongst individuals who might otherwise be more inclined to vehement (and violent) disagreement. The regulations of these associations usually forbade under penalty of expulsion the discussion of divisive and often specifically political and religious topics within their walls. Citing this exclusion, Michael J. Finerty, the (presumably rather busy) editor of the *Galway Vindicator*, Secretary of the Parent Temperance Society and Literary Institute, member of the Galway Trades Temperance Mechanics' Institute and Repeal activist, described the unifying effect of teetotalism: "The promotion of Temperance was seen to meet with the concurrence of men of every class and creed. In fact it was the moral *oasis* in the arid desert of opinion to which all might repair from the heat of party strife."[52] These words are echoed in the Inaugural Address of Edward Kenealy, vice-president of the Temperance Institute for Literature and Science of Cork, when he proclaimed that temperance united "all without distinction of creed or country, blending man into one common brotherhood."[53]

Such claims had long been made for science. Thus a supporter of the Belfast Mechanics' Institute wrote to the *Christian Patriot* newspaper, "Science is of no party, and her followers of whatever creed, constitute a wide and diffusive community, which is linked together by ties of brotherhood and interest, which religious animosity, or political hostility can never sever."[54] Science societies and mechanics institutes repeatedly described their venues as neutral spaces where men could meet and leave their partisan differences outside. As the Honorary Secretary of the middle-class Waterford Literary and Scientific Institution declared,

> We here possess a neutral ground, on which men of all parties may contend without rancour, and bear away palms which do not cost their opponents one embittered or unhallowed feeling. We have common subjects on which all may agree, without being taxed with any interested compromise of opinion, and concerning which they may differ, without alteration in mutual feelings, or diminution of mutual esteem. A bond of fellowship is thus frequently formed between those whom circumstance would otherwise have kept for ever asunder.[55]

The rhetoric of science as a neutral ground was indeed so pervasive in the annual reports of these associations that one begins to doubt whether so much peace and harmony actually reigned within their walls, especially, for example, when in a summary of the 1842 season of the Cork Scientific and Literary Society, a commentator found it expedient to praise the society for having made it through the year with "the absence of any manifestation of personal or party feeling."[56]

Nonetheless, the rhetoric of the neutral ground took on a particular significance in this deeply divided country. In his essay on "Science and Social

Policy in Ireland," James Bennett interprets the "neutral ground" as a rhetoric in the interest of the political status quo. With science in the hands of the Established Protestant minority, he argues, this rhetoric served to direct attention away from the political and cultural interests and agendas directing the course of scientific inquiry and practices.[57] Bennett's point, "the question of whether science can claim a disinterested agenda, or whether it is always socially constructed," however, does not exclude the possibility that different parties could utilize this rhetoric to different ends. Parallels with the temperance movement make this clear: Protestant and Catholic temperance rhetoric showed many similarities, but the Protestant and Catholic temperance movements carried very different cultural meanings, including, as will be shown, different understandings of what ought to be built upon the "neutral ground" of temperance. Similarly, professional scientists proclaiming the general and transcendental neutrality of science had different considerations than presidents and secretaries of mechanics' institutes and science societies commenting on their specific weekly interactions. As little as these spaces actually embodied neutrality, when civilized discourse broke down into rancor, the rhetoric of the neutral ground at least allowed participants and combatants to step back, cool off and return, to try, try again.

Nonetheless, despite repeated claims of neutrality, neither science nor temperance remained fully separate from politics. Suspicions about the "true" nature of the temperance movement had been voiced in conservative newspapers as early as 1840. "These Societies are every day assuming a more political character, and bid fair under Priestly influence to become a Popish confederacy for Repealing the Union," complained the editor of the *Drogheda Conservative*, after a local temperance society had closed a meeting with three cheers for O'Connell. The *Galway Weekly Advertiser*, in the hands of the notoriously and viciously anti-Catholic "Brunswicker Burke" connected the Galway Teetotalers not only to the Repeal movement, but to Ribbonism as well.[58] Irish recalcitrance to British domination had long been placed at the door of drink. Protestant temperance societies had promoted abstinence as a means to contain the unpredictable Irish violence presumably fueled by alcohol and to create a more docile Ireland under British rule. Paradoxically, temperance societies had now replaced the pub in conservative Protestant minds as the recruiting grounds for political radicalism.

Although Burke's accusation of Ribbonism, of participation in a secret society committed to agrarian violence, was pure vitriol, critics had reason for concern. Father Mathew took great pains to keep his temperance movement politically neutral, but, due to the intentionally decentralized nature of the movement, local societies were not under his direct control. Indeed, many saw little reason to separate the temperance movement from that for Repeal, the moral improvement of sobriety being deemed the ideal foundation for political emancipation. As one contemporary noted, "A sober people are eminently entitled to political freedom."[59]

Informal connections between temperance and Repeal were systematically developed and exploited by Daniel O'Connell, Ireland's politically astute Repeal leader and MP, who, despite family connections to the brewing industry and strong support among publicans and spirit grocers, took the pledge in October of 1840.[60] Temperance reading rooms became Repeal reading rooms as the movement sought to harness the impetus of the adult education movement to its political mission, while temperance bands (and mechanics' institute bands) played at Repeal processions, and temperance rooms were used for the meeting of Repeal Clubs. Temperance and nationalist sympathies frequently overlapped, and local notables often actively promoted both causes. Reverend B. J. Roche, President of the Galway Cork Total Abstinence Society, sat on the town's Repeal committee and later let its rooms be used for the purposes of establishing a Repeal Club, for example, while Reverend John Kenyon, who had been a supporter of the temperance movement since the late 1830s, was well known for his strong sympathies for the Young Ireland movement.[61]

Science associations were included in this intersection of interests. Although science societies and mechanics' institutes generally prohibited the discussion of politics and religion, in practice, depending on the composition and interests of their membership, they were not always averse to the discussion of political topics or the celebration of political heroes. Thus the Galway Mechanics' Institute and Temperance Society held a temperance festival in 1841 to celebrate the election of the independent candidate, Valentine Blake, who was a strong supporter of trades interests,[62] while the Dublin Mechanics' Institute hosted lectures by Young Ireland activists John Mitchel, Thomas Francis Meagher and William Smith O'Brien in the 1840s.[63] Unitarians and Quakers had also long been active in various liberal and radical social reform organizations and modernizing agendas. Richard Dowden, Unitarian and Repealer, later Mayor of Cork, was deeply involved in both the temperance movement and in the town's several scientific societies, as a member of the Cork Cuverian Society, Secretary of the Cork Mechanics' Institute and librarian of the Royal Cork Institution. James Haughton, a Unitarian from a wealthy Dublin Quaker family,[64] was not only one of Ireland's leading temperance advocates. He strongly supported the Repeal movement and campaigned for a variety of humanitarian causes including the abolition of slavery and alternative medicine (hydropathy), in addition to his involvement in the working class Dublin Mechanics' Institute. Like Dowden, he was also a member of the more elite Dublin Statistical Society,[65] an association of Trinity College professors, primarily from the natural sciences and economics.[66]

It is perhaps even more significant, however, that figures such as Charles Gavan Duffy, Thomas Davis, and others who were prominent in the Young Ireland movement or, who, like John Francis Blake, proprietor of the *Galway Vindicator*, were politically vocal enough to suffer under the fallout of the 1848 uprising, also made the connection between science, temperance and Irish nationalism.[67] The expectations that individuals such as the Galway me-

chanics had for their own moral, social and financial improvement through the twin blessings of science and temperance could be applied to the Irish nation as a whole. If science and temperance could form the basis of individual improvement, they could also lay the foundation for the improvement of Ireland, for creating an industrious workforce that, using modern technology, would create a prosperous nation. "Education and Temperance are the seeds of National Prosperity," a contemporary proclaimed, "Heaven send us an abundant Harvest."[68]

While early discussions of temperance, technology and science education for Ireland emphasized their unique role in the project of individual moral and financial improvement, by the 1840s this theme increasingly permeated debates on increasing local and national prosperity. If Mathew had hoped for an end to poverty and sectarian division through temperance, others could see in industrialization or, at least, in the more efficient utilization of Ireland's native human, industrial and natural resources, the solution to her problems, whether financial, religious or political. A participant in the meeting of the Irish Manufacture Movement in Limerick in 1841 described a scene of unification and purpose that echoes the visions of scientific and temperance missionaries: "There was a happy blending of all shades of politics, creeds and parties, each vying with the other in the glorious determination to make Ireland a nation. Indeed, by eliminating her great resources – exalting her fallen condition – encouraging her native produce, and rendering the operative classes of her people independent, prosperous and happy."[69] Hopes for Irish prosperity transcended – or at least, temporarily repressed – sectarian differences and, this witness implied, would unify Ireland's diverse and divided population into an inclusive Irish nation.

Debates on the improvement of Ireland took an "industrial turn" with the publication of Robert Kane's *Industrial Resources of Ireland* in 1844.[70] A Catholic chemist, Kane was Ireland's scientific star, not only internationally respected and admired, but also one of the most effective promoters of industrial and scientific education for Ireland, an avid supporter of local scientific activities and of the dissemination of scientific knowledge to the public. With his guest lectures at mechanics' institutes, scientific societies and agricultural shows, as well as his regular lecture courses at the Royal Society of Dublin,[71] Kane was well-known to both professionals and the public. In the *Industrial Resources*, which swiftly advanced to become the handbook of Irish economic emancipation, Kane described in great detail the island's rich resources awaiting exploitation. Ireland, he claimed, possessed the human and natural resources to raise its population from destitution to prosperity. Scientific and technological education, combined with temperance and moral conduct, would render the Irish "independent of the wretched political differences on which we waste our strength." A scientifically educated man, he continued, was certain to succeed, "success will render him independent; independence will render him respected, and respect will bring him power."[72]

Not surprisingly, despite Kane's own Unionist stance, his arguments for the prospects of Irish economic self-sufficiency provided welcome support for the independence cause. Just as sobriety was seen as the first step towards political independence, modern science and industry were to form the basis for economic self-sufficiency, and both together would yield an Ireland prosperous and free. Thomas Davis, Protestant leader of the Young Ireland movement, expressed this most clearly, when he connected both intemperance and scientific ignorance to the condition of Irish degradation. As he wrote in his review of Kane's book, "We must know Ireland from its history to its minerals, from its tillage to its antiquities, before we shall be an Irish nation, able to rescue and keep the country. And if we are too idle, too dull, or too capricious to learn the arts of strength, wealth and liberty, let us not murmur at being slaves."[73] Intemperance was likewise "the saturnalia of slaves," while temperance offered "the first fruit of deep-sown hope, the offering of incipient freedom."[74]

As much as the *Industrial Resources* provided welcome fodder for supporters of Irish political emancipation, the vision of an Ireland sober, educated, prosperous and economically independent was one that all could share – diffuse enough to unite, yet encompassing enough to enthuse. Liberals and moderates of all creeds could agree on the soothing and beneficial effects that sobriety and prosperity would mutually bestow upon the country. Upon this basis, Ireland could leave the centuries of violence and poverty behind to rise again. The language of temperance and science for Ireland was a rhetoric of renewal and confidence in the future, after the disasters of the past (and before the disasters to come):

> Ireland has experienced calamity, has tasted deep of misfortune, has had to endure the derisive sneer and ill-subdued taunts of supercilious effrontery, and would-be superiority. But a brighter day is dawning: KNOWLEDGE IS POWER, and it is sought for with avidity. TEMPERANCE IS THE HARBINGER OF NATIONAL IMPROVEMENT, and its effects are already everywhere perceptible; with both united, we may proudly augur that IRELAND'S WORST DAYS ARE PAST, NEVER TO RETURN.[75]

And, since science and temperance were both, supposedly, beyond the partisan fray, they were seen as the potential foundation on which to build a non-sectarian, peaceful and prosperous, inclusive Irish nation, "a neutral ground where creed and class could meet,"[76] to transcend their differences and become not Repealers or Unionists, Protestants or Catholics, but Irishmen.

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Endnotes

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1. "Galway Trades Temperance Society and Mechanics' Institute," *Connaught Journal*, February 13, 1840.

2. For the history of the Galway Mechanics' Institute see Elizabeth Neswald, "Science, Sociability and the Improvement of Ireland: The Galway Mechanics' Institute 1826-1850," *British Journal for the History of Science* 39 (2006): 503-34.

3. "Carrick-on-Suir. Local Improvement," *Tipperary Free Press*, September 26, 1840.

4. "Waterford Mechanics' Institute," *Waterford Chronicle*, September 29, 1840; "Waterford Mechanics' Institute," *Waterford News*, February 22, 1843; "Temperance Soiree – Wexford Mechanics' Institute," *Tipperary Free Press*, January 12, 1848; "Professor Barnett," *Tipperary Free Press*, April 27, 1844; "Animal Magnetism," *Galway Vindicator*, April 25, 1846; "Temperance Institute," *Cork Examiner*, September 26, 1845; "Temperance Institute," *Cork Examiner*, November 4, 1846.

5. "Metropolitan Advocates Society for the Diffusion of Knowledge on Temperance and other Useful Subjects," *Dublin Journal of Temperance, Science and Literature*, October 22, 1842; Justin McCarthy, *The Story of an Irishman* (London: Chatto and Windus, 1904), 31-43; "Temperance Institute," *Cork Examiner*, August 29, 1845; "The Galway Parent Temperance Society and Literary Institute," *Connaught Journal*, May 7, 1840; "Revival in Galway of the Irish Language and Literature," *Galway Vindicator*, November 9, 1844.

6. Central for this topic are: Elizabeth Malcolm, *Ireland Sober, Ireland Free* (Dublin: Gill and McMillan, 1986); Colm Kerrigan, *Father Mathew and the Irish Temperance Movement 1838-1849* (Cork: Cork University Press, 1992); George Bretherton, "The Battle Between Carnival and Lent: Temperance and Repeal in Ireland, 1829-1845," *Social History* 27 (1994): 295-320; Paul A. Townend, *Father Mathew, Temperance and Irish Identity* (Dublin/Portland, OR: Irish Academic Press, 2002); John F. Quinn, *Father Mathew's Crusade. Temperance in Nineteenth-Century Ireland and Irish America* (Amherst/Boston: University of Massachusetts Press, 2002).

7. Recent contributions to the history of popular science in Ireland include Ruth Bayles, "Understanding Local Science: The Belfast Natural History Society in the Mid-Nineteenth Century" in *Science and Irish Culture I: Why the History of Science Matters in Ireland,* ed. David Attis and Charles Mollan (Dublin: Royal Society of Dublin, 2004): 139-69; Juliana Adelman, "Communities of Science: The Queen's Colleges and Scientific Culture in Nineteenth Century Provincial Ireland, 1845-1875," (PhD Diss. NUI Galway 2006), esp. Chapter 3, "Science in the Community: Voluntary societies in Cork," 55-92; Enda Leaney, "Phrenology in Nineteenth-Century Ireland" in *New Hibernia Review/Iris Éireannach nua* 10/3 (2006): 24-42. See also the essays in *Prometheus's Fire: A History of Scientific and Technological Education in Ireland* ed. Norman MacMillan (Kilkenny: Tyndall Books, 2000); Peter Bowler and Nicolas Whyte, eds., *Science and Society in Ireland: The Social Context of Science and Technology in Ireland, 1800-1950* (Belfast: Institute of Irish Studies, 1997); John Wilson Foster, ed., *Nature in Ireland: A Scientific and Cultural History* (Dublin: Lilliput Press, 1997); Attis and Mollan, eds., *Science and Irish Culture I.*

8. Cf. James Bennett, "Science and Social Policy in Ireland in the Mid-Nineteenth Century," in *Science and Society in Ireland*, 40-41; Terry Eagleton, *Scholars and Rebels in Nineteenth-Century Ireland* (Oxford: Blackwell, 1999), 90-91.

9. Young Ireland emerged from the Repeal movement around 1842. It was a non-sectarian movement and promoted an inclusive model of Irish nationhood, a "secular nationalism." Originally supporting O'Connell, it later became critical of his political pragmatism and insistence on change through a process of gradual reform. After a failed uprising in July of 1848, many Young Ireland activists were either imprisoned or fled. See Richard Davis, *The Young Ireland Movement* (Dublin: Gill and Macmillan, 1987), 230-43.

10. For the role of voluntary associations in forming middle-class identities see, for example, R. J. Morris, *Class, Sect and Party: The Making of the British Middle Class in Leeds* (Manchester: Manchester University Press, 1990); Stuart M. Blumin, *The Emergence of the Middle Class: Social Experience in the American City, 1760-1900* (Cambridge: Cambridge University Press, 1989).

11. For a history of British mechanics institutes see Mabel Tylecote, *The Mechanics' Institutes of Lancashire and Yorkshire Before 1850* (Manchester: Manchester University Press, 1957); Thomas Kelly, *A History of Adult Education in Great Britain: From the Middle Ages to the*

Twentieth Century, Third edition (Liverpool: Liverpool University Press, 1992); Thomas Kelly, *George Birkbeck, Pioneer of Adult Education: A Biography* (Liverpool: Liverpool University Press, 1957).

12. Several adult education associations have been claimed as precursors, including the Spittelfields Mathematical Society and the Anderson Institute of Glasgow. Birkbeck was undoubtedly influenced by the latter. See Tylecote, *Mechanics' Institutes*, Chp. 1; Kelly, *Birkbeck*, Chp. 2.

13. John Hudson, *The History of Adult Education* (London, 1851), VI.

14. This information has been gathered from a variety of sources, including local newspapers, *Slater's National Commercial Directory of Ireland* (Manchester and London, 1856); Kieran Byrne, "Mechanics' Institutes in Ireland, 1825-1850," *Proceedings of the Educational Studies Association of Ireland Conference, Dublin 1979* (1979): 32-47; Kieran Byrne, "Mechanics' Institutes in Ireland before 1855," (MA Thesis, University of Cork, 1976); Seamus Duffy, "'Treasures Open to the Wise': The Mechanics' Institutes of North-East Ulster," in *Prometheus's Fire*, 322-36.

15. For the transition from training based on oral learning and the acquisition of practical skills to book-learning see David Vincent, *Literacy and Popular Culture* (Cambridge: Cambridge University Press, 1989), Chapter 4.

16. Tylecote, *Mechanics' Institutes*, 57-59; G.W. Roderick and M. D. Stephens, "Mechanics' Institutes and the State," in *Steam Intellect Societies: Essays on Culture, Education and Industry circa 1820-1914*, ed. Ian Inkster (Nottingham: Department of Adult Education, University of Nottingham, 1985), 62.

17. Seminal studies are, in addition to Morris, *Class,* Arnold Thackray, "Natural Knowledge in Cultural Context: The Manchester Model", *American Historical Review* 79 (1974): 672-709; Howard M. Wach, "Culture and the Middle Classes: Popular Knowledge in Industrial Manchester," *Journal of British Studies* 17 (1988): 375-404.

18. Steven Shapin, "The Pottery Philosophical Society, 1819-1835," *Science Studies* 2 (1972): 311-36; Ian Inkster, "Cultural Enterprise: Science, Steam Intellect and Social Class in Rochdale circa 1833-1900," *Social Studies of Science* 18 (1988): 291-330; Jack Morrell, "Wissenschaft in Worstedopolis: Public Science in Bradford, 1800-1850," *British Journal for the History of Science* 18 (1985): 1-23.

19. Seamus Duffy, "Treasures Open to the Wise".

20. The Municipal Reform Act dismantled the corporations, which had in some towns developed a nearly hereditary character, and which were rarely capable of and often not particularly interested in efficiently administering local affairs. For the corporations and their reform see Virginia Crossman, *Local Government in Nineteenth-Century Ireland* (Belfast: Queens University Belfast/Ulster Society of Irish Historical Studies, 1994).

21. Kelly, *George Birkbeck*, 252.

22. Seamus Duffy, "Treasures Open to the Wise," 326.

23. For the British temperance movement, see the classic study by Brian Harrison, *Drink and the Victorians: The Temperance Question in England 1815-1872* (London: Faber and Faber, 1971).

24. Harrison, *Drink*, 27.

25. For changes in cultural and class conceptions of leisure and leisure activities in the first half of the nineteenth century see Hugh Cunningham, *Leisure in the Industrial Revolution* (London: Croom Helm, 1980). See 89-102 for "rational recreation."

26. For the effect of temperance on Irish sociability and leisure activities see Elizabeth Malcolm, "Popular Recreation in Nineteenth-Century Ireland" in *Irish Culture and Nationalism, 1750-1950,* ed. Oliver Macdonagh, W. F. Mandle and Pauric Travers (Houndmills: MacMillan, 1983): 40-55.

27. See for example Steven Shapin and Barry Barnes, "Science, Nature and Control: Interpreting Mechanics' Institutes," *Social Studies of Science* 7 (1977): 31-74.

28. J. F. C. Harrison, *Learning and Living 1790-1960: A Study in the History of the English Adult Education Movement*, Second edition (London: Routledge and Kegan Paul, 1963), 77.

29. Toshio Kusamitsu, "Mechanics' Institutes and Working Class Culture: Exhibition Movements, 1830-1840s," *Steam Intellect Societies*, 37.

30. Tylecote, *Mechanic's Institutes*, 42, 99, 290.

31. The Rebellion, following a decade of radicalisation in the wake of the French Revolution, was characterised by excessive violence on both the British and Irish sides.

32. See Elizabeth Malcolm, "Temperance and Irish Nationalism" in *Ireland Under the Union. Varieties of Tension. Essays in Honour of T. W. Moody* ed. F. S. L. Lyons and R. A. J. Hawkins (Oxford: Clarendon Press, 1980): 69-114.

33. In the mid 1820s, after O'Connell founded the Catholic Association, Catholic Emancipation became a broad popular movement. The Catholic Association organised Catholics of different social classes to work towards a common cause and express themselves through such demonstrative public forms as rallies, fundraisers and large meetings. The electoral successes of the movement in 1826, and especially O'Connell's electoral victory in County Clare in 1828 paved the way for removal of the Catholic disabilities in 1829.

34. Malcolm, *Ireland Sober*, 56, 63.

35. Kerrigan, *Father Mathew*, 34; Malcolm, *Ireland Sober*, 85.

36. Malcolm, *Ireland Sober*, 88-90; Kerrigan, *Father Mathew*, 63.

37. Richard Harrison has compiled a small but enormously useful reference volume on Irish Quakers. Richard S. Harrison, *A Biographical Dictionary of Irish Quakers* (Dublin: Four Courts Press, 1997). As Elizabeth Malcolm has shown, at least half of the first 26 subscribers to the Irish Temperance Union came from well known Quaker and Unitarian families, denominations that made up a mere fraction of the total Irish population. Malcolm, *Ireland Sober*, 94.

38. Townend, *Father Mathew*, 1.

39. For some sectors of the population, taking the pledge at Mathew's hands was seen as a form of pilgrimage, while the temperance medals and cards he distributed assumed the aura of saint's medals and the friar himself was granted healing powers. For the ecstatic elements of Mathew's temperance crusade see Malcolm, *Ireland Sober*, 112-13.

40. For the difference between social mobility and status mobility see Geoffrey Crossack, "The Labour Aristocracy and its Values: A Study in Mid-Victorian Kentish London," *Victorian Studies* 10 (1975-76): 301-28.

41. "Galway Trades Temperance Society and Mechanics Institute," *Connaught Journal*, February 13, 1840.

42. "Temperance and Education," *Dublin Weekly Herald*, June 27, 1840.

43. "Waterford Mechanics' Institute," *Waterford Mail*, February 22, 1843. See also "Mechanics' Institute Soiree to Professor Kane," *Galway Vindicator*, September 11, 1844; Edward Kenealy, *The Inaugural Address to the Members of the Temperance Institute* (Cork: George Nash 1845), 8.

44. For the rhetoric of early Irish mechanics' institutions see Byrne, "Mechanics' Institutes" (1979); Michael J. McGuinness, "The Londonderry Mechanics' Institute 1829-1830," *Templemore: Journal of the North-West Archaeology and Historical Society* 1 (1984/85): 61-68; Seamus S. Duffy, "The Armagh Mechanics' Institute (1825-1831)," *Seanchas Ard Mhacha* 13 (1988): 122-72; Neswald, "Science, Sociability."

45. Thomas Cliffe-Leslie, *An Inquiry into the Progress and Condition of Mechanics' and Literary Institutions; Part I: A paper read before the Dublin Statistical Society, on Monday, 16th of February, 1852* (Dublin: Hodges and Smith, 1852), 6.

46. "Teetotalism and Popular Education," *Galway Vindicator*, October 27, 1841 (reprinted from the *Belfast Vindicator*). See also "To our Readers," *Dublin Journal of Temperance*, April 30, 1842.

47. Lenihan was a vocal supporter of both temperance and Repeal movements. He worked as a publicist for the *Tipperary Free Press,* the *Waterford Chronicle* and the *Cork Examiner* under John Francis Maguire and owned, ran and published in several newspapers over the course of his career, including the *Limerick Reporter* and the *Tipperary Vindicator*. He also authored a *History of Limerick* (1866) and was mayor of the city in the 1880s. G. Le G. Norgate, "Lenihan, Maurice (1811–1895)," rev. Marie-Louise Legg, *Oxford Dictionary of National Biography* (Oxford University Press, 2004) http://www.oxforddnb.com/view/article/16444 [Accessed Sept 5, 2007]. See also Francis Finegan, "Maurice Lenihan – Historian of Limerick," *Old Limerick Journal* No. 17 (1984), 11-14; No. 18 (1985), 27-30; 19-20 (1986), 5-9; 7-10. At the time of this newspaper

article, he was proprietor, editor and publisher of the *Limerick Reporter*, the newspaper, in which it was printed.

48. "Limerick Literary and Philosophical Society," *Limerick Reporter*, May 18, 1841.

49. According to Townend, Mathew had 30,000 copies published and distributed at his own expense. Townend, *Father Mathew*, 224.

50. "Popular Education – Teetotalism," *Galway Vindicator*, October 16, 1841 (reprinted from the *Dublin Monitor*).

51. At the local level, the temperance movement could also exhibit coercive characteristics. Temperance societies often posted members outside the pubs to catch pledge-breakers, who would then be publicly named and shamed, while many employers required proof of the temperance pledge from prospective employees. Thus, for example, the Galway Mechanics' Institute stipulated in its regulations, "that is the duty of every member, who may discover another member violating his pledge, to proceed forthwith to the Society's Room, and have it entered on the Blotter, specifying name, time, place, and in what way violated." "Galway Trades Temperance Society, Total Abstinence, and Mortality Association," *Connaught Journal*, June 4, 1840. See also Kerrigan, *Father Mathew*, 73-74.

52. "Great Temperance Meeting," *Connaught Journal*, July 23, 1840. Father Mathew had also referred to the ability of temperance to heal sectarian and political divisions. Malcolm, *Ireland Sober*, 120.

53. Kenealy, *Inaugural Address*, 14. This institute was founded by Father Mathew, who remained its president, in 1845, for the edification of young men of the commercial class. It offered a variety of activities, including public lectures given by its members, for the most part on scientific subjects. For a description of this institution and its intentions see also the reminiscences of early member Justin McCarthy in McCarthy, *Story*, Chapter III. For a sample of some lecture topics see "The Temperance Institute," *Cork Examiner*, September 3, 1845; "Temperance Institute," *Cork Examiner*, September 26, 1845; "Temperance Institute, Academy Street," *Cork Examiner*, November 4, 1846; "Temperance Institute," *Cork Examiner*, January 7, 1848.

54. "Mechanics Institutions," *Dublin Weekly Herald*, July 20, 1839 (reprinted from the *Christian Patriot*).

55. John Elliot, AMMD (Honorary Secretary), *An Address delivered at the closing of the Third Session of the Waterford Literary and Scientific Institution on Thursday Evening, April 30, 1835* (Waterford, 1835), 26.

56. "It is cheering," the commentator continued, "to reflect that amid the conflicting elements of our social and political position, there is at least one neutral spot to which all may repair for instruction and rational relaxation, whatever their political tendency or religious creed may be… It is pleasant to reflect that there is one verdant spot rising amid the troubled and bitter waters which inundate our unfortunate country, to which all may repair and meet, and hold converse together, and get rid perhaps of some of our mutual prejudices, and correct many of our rashly formed opinions of each other, and go away with a more indulgent, a more charitable, and therefore a more Christian spirit towards one another." "Cork Scientific and Literary Society," *Cork Examiner*, May 1, 1842. See also "First General Annual meeting of the Clonmel Mechanics' Institute," *Tipperary Free Press*, January 18, 1843; *Report of the Committee of the Clonmel Mechanics' Institute, to the Annual General Meeting MDCCCXLV; with the Rules, List of Members, Catalogue of Books in the Library, etc. etc.* (Clonmel, 1845) 5; "Mechanics' Institutions – Their Rise and Progress," *Dublin Journal of Temperance*, October 15, 1842.

57. Bennett, *Science and Social Policy*, 41, 44.

58. "Political Teetotalers," *Drogheda Conservative*, July 4, 1840; "Hurra – Repeal Movement a Political One," *Galway Weekly Advertiser*, August 1, 1840. "Brunswick Clubs" were the radical fringe of ultra-Tory, evangelical, anti-Catholic organisations, akin to the Orange Order, which at the time had been disbanded, and founded in response to Catholic Emancipation.

59. Quoted in Colm Kerrigan, "Temperance and Politics in Pre-Famine Galway," *Journal of the Galway Archaeological and Historical Society* 43 (1991), 88.

60. O'Connell's commitment to the temperance cause was, however, relatively short-lived. Medical reasons were cited as grounds for him to step back from his pledge in 1842 and, by 1843, he was again seeking the backing of the drinks interests. Malcolm, *Ireland Sober*, 130. As Kadel

shows, nationalist sympathies were also widespread among Irish publicans and spirit grocers. Bradley Kadel, "The Pub and the Irish Nation," *Social History of Alcohol and Drugs* 18 (2003), 69-84.

61. "Repeal Club," *Galway Vindicator*, June 10, 1848; Davis, *Young Ireland*.

62. "Temperance Festival", *Galway Vindicator*, July 10, 1841.

63. Jim Cooke, "The Dublin Mechanics' Institute, 1824-1919," *Prometheus's Fire*, 342.

64. There is much uncertainty on the question of Haughton's religious affiliation. I thank the anonymous referee for this clarification.

65. Haughton also read papers on temperance and the evils of intemperance to this society. James Haughton, *On the Connexion between Intemperance and Crime* (Transactions of the Dublin Statistical Society, Vol. I, Session 2), Dublin: Hodges and and Smith, 1849; Idem, *The use of alcoholic liquors: economically, socially, and morally wrong*, (Transactions of the Dublin Statistical Society, Vol. I, Session 2), Dublin: Hodges and Smith 1849; Idem, "Some facts which suggest the idea that the desire for alcoholic stimulants is not only transmitted by hereditary descent, but that it is also felt with increasing force from generation to generation, and thus strongly tends to deteriorate the human race," *Journal of the Dublin Statistical Society*, Vol. II, Part 7 (1858), 203-14.

66. Other members of the Statistical Society included Thomas Cliffe-Leslie and Robert Kane, Catholic Ireland's world-renowned star chemist.

67. Although the extent of Blake's connections with Young Ireland remain unknown, he, along with *Vindicator* reporter Edward Butler was arrested in July of 1848 under the Habeas Corpus Suspension Act, which the government enacted in reaction to the uprising. "Government Arrests in This Town," *Galway Vindicator*, August 2, 1848. Overlaps can also be found among the membership of the Cork Temperance Institute for Literature and Science and various organisations with nationalist agendas such as the Young Ireland affiliated Confederate Clubs. Isaac Varian of Cork, brush maker and Young Irelander, was an active teetotaller, member of the Desmond Confederate Club and strong backer of scientific lectures and activities in the Temperance Institute of Cork. He was held with his brother Ralph in the Cork County Gaol after the uprising.

68. "Apostle of Temperance," *Tipperary Free Press*, February 23, 1848. See also "To our Readers," *Dublin Journal of Temperance*, April 30, 1842.

69. "Irish Manufacture Movement in Limerick – Great and Influential Meeting at the Theatre on Yesterday – Lord Guillamore Presiding," *Limerick Reporter*, January 19, 1841.

70. Robert Kane, *Industrial Resources of Ireland* (Dublin: Hodges and Smith, 1844).

71. It must be noted, however, that elite British science society, the Royal Society of London was quicker to admit Kane as Fellow than his "own" national professional organization, the Royal Society of Dublin, a position indicative of its Ascendancy prejudices. Kane was later to sit on the government committee scientifically investigating the causes and remedies of the potato blight. Desmond Reilly, "Robert Kane (1809-90): Irish Chemist and Educator," *Journal of Chemical Education* 32 (1955): 404-6; P. M. Austin Bourke, "The Scientific Investigation of the Potato Blight in 1845-46," *Irish Historical Studies* 13 (1962/63): 26-32.

72. Kane, *Industrial Resources*, 426.

73. Thomas Davis, "Industrial Resources of Ireland," in *Essays Literary and Historical by Thomas Davis* ed. D. J. O'Donoghue (Dundalk: W. Tempest, Dundalgan Press, 1914), 153-4. See also Thomas Davis, "'Educate, That You May Be Free'" in *Thomas Davis*, 225-30.

74. From *The Nation*, January 28, 1843, quoted in Malcolm, *Ireland Sober*, 131.

75. "Ireland as She Was," *Dublin Journal of Temperance*, May 7, 1842. See also "A Glimpse at the Future," *Dublin Journal of Temperance*, May 28, 1842; "Galway Mechanics' Institute," *Galway Vindicator*, August 17, 1844.

76. *Clonmel Mechanics' Institute*, 5.